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## INSPECTION PROCEDURE 88200

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### INSPECTIONS OF SAFETY SIGNIFICANT ITEMS AND SERVICES DURING CONSTRUCTION OF FUEL CYCLE FACILITIES

PROGRAM APPLICABILITY: IMC 2600, 2694

This procedure provides guidance for inspection of work activities associated with the construction of new fuel cycle facilities (FCFs) and modifications, as applicable.

#### 88200-01 INSPECTION OBJECTIVES

- 01.01 To determine if onsite construction, including modifications, as applicable, of FCFs is being accomplished in accordance with the licensing basis and other applicable regulatory requirements.
- 01.02 To determine if the records reflect work accomplishment consistent with the licensing basis and construction documents.
- 01.03 To determine if there are any potential construction nonconformances, which includes design, fabrication, installation, testing, etc., that may warrant a follow-up inspection.

#### 88200-02 INSPECTION REQUIREMENTS

NOTE: This inspection procedure (IP) is intended to provide inspection requirements and guidance applicable to a wide variety of potential construction projects at both existing and new FCFs. These projects may vary greatly in scope, complexity, and potential risk to public health and safety. As a result, not all appendices or sections of each appendix of this IP may be applicable or implemented at a specific facility. Recommended inspection scope and hours for a specific new fuel cycle facility will be documented in the principal inspection plan (PIP) for that facility developed in accordance with Inspection Manual Chapter (IMC) 2694, "Fuel Cycle Facility Construction and Pre-Operational Readiness Review Inspection Program." Additionally, this IP can be used to provide additional inspection guidance for plant modification inspections at existing facilities but is not required to be implemented for these projects. Use of this IP, or sections of this IP for modifications at existing FCFs, would be done on a case-by-case basis, in accordance with IMC 2600, Appendix B, "NRC Core Inspection Requirements."

This IP applies to FCFs licensed under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 40 and Part 70 but does not apply to plutonium processing facilities. The specific licensing basis and commitments between facilities vary. This IP does not establish new requirements for any facility but must be applied in consistency with the licensing basis of that facility. In using this IP, inspectors should correlate the specific sections and terminology used with that defined in the licensing basis of the facility being reviewed. For example, the term, items relied on for safety or "IROFS" as used in this IP may be considered to refer to similar safety features or credited controls for 10 CFR Part 40 licensees.

02.01 Specific inspection requirements for each type of technical inspection are provided in the appendices of this IP.

## 88200-03 INSPECTION GUIDANCE

### Definitions

- a. Direct Observation Techniques. Direct observation includes observing in-process construction-related activities such as fabrication, qualification, assembly, installation, inspection, examination, and testing to determine if the activity was performed in accordance with work control documents (e.g., applicable instructions, procedures, and/or drawings).
- b. Record Review. Record review includes review of a sample of completed records to determine whether the construction-related work activity was performed in accordance with applicable instructions, procedures, and/or drawings. For the records reviewed, the inspectors should determine whether the records were (1) adequate to furnish identifiable and retrievable evidence of activities affecting quality, and (2) met other requirements prescribed by the licensee's record management program.

If possible, the inspectors should also perform a walk-down of the completed work activity associated with the records reviewed, to determine whether the as-built item conforms with the final design, construction documents, and the records reviewed.

- c. Independent Assessment/Inspection. The inspectors may also conduct an independent assessment or inspection (walk-down, measurement, etc.) to determine whether the as-built item conforms to the final design.

### General Guidance

NRC inspections should include one or more of the following inspection techniques: (1) direct inspection of in-process work activities, (2) review of completed records of work activities, or (3) independent assessment or inspection of completed work activities. The NRC will focus on direct inspections of construction activities at FCFs when practical. The items listed in the appendices of this IP may be inspected via records review and observation of the as-built condition of the items when direct observation of construction activities is not practical. Each of the appendices to this IP may be performed separately and should be performed at the appropriate time during plant construction for the items being inspected, and at the suggested frequency. However, to gain efficiency, two or more appendices may be performed concurrently. Additionally, efficiency gains may be realized by performing management measures program implementation inspections (IP 88201) in conjunction with this IP. The overall FCF construction inspection philosophy is described in detail in IMC 2694.

During the inspection planning process, the inspector should review the applicable portions of the licensing basis including the integrated safety analysis (ISA), or integrated safety analysis summary (ISAS), as applicable, and the relevant construction documents. Technical requirements are established by the final design of the facility. The final design is prescribed by a "flow-down" of technical requirements from the NRC issued license through design documents to final construction documents. The ISA or ISAS, and design output documents will usually reference industry codes and standards that provide specific requirements for the design,

fabrication, assembly, and testing. Note that some facilities may use the term license application instead of ISA. These terms are considered synonymous for this IP.

The licensee/contractor procedures involved may vary from contractor to contractor, and may take many forms, such as formal procedures, instructions, checklists, drawings, etc. Inspectors should review the inspection procedures/lists and compare with the requirements in the applicable codes and construction specifications. Evaluation should indicate whether quality-related inspections are established by the licensee, and are based on appropriate criteria, and whether the results of the licensee/contractor's inspection will be transmitted to responsible construction quality inspection and management personnel. The NRC inspector should determine if the licensee controls are adequate and are properly implemented in a timely manner.

As a part of the planning process, inspectors should ensure that the items selected for inspections are safety significant items and services (SSIS), including IROFS. If construction of SSIS cannot be directly observed, then inspectors may conduct record review and observation of the as-built condition of safety significant items to fulfill the inspection requirements. If there are no SSIS for the facility, then the associated appendix need not be completed.

Inspectors should familiarize themselves with the management measures that are applied to IROFS to provide reasonable assurance that the IROFS will perform their intended safety function when needed to prevent accidents or mitigate the consequences of accidents to an acceptable level. Management measures are defined by the licensee in the facilities' ISA/ISAS. These management measures may include additional quality assurance elements or a commitment to a Quality Assurance Program (QAP). If so, inspectors should review the QAP and the licensing basis for the QAP, if applicable. The licensee's commitment to a QAP standard, or lack thereof, in the licensing basis should inform the inspector when implementing the appendices of this inspection procedure. Specific requirements and guidance referencing the QAP in the appendices of this inspection procedure may not be applicable at some facilities.

This IP is not intended to implement a programmatic evaluation of the licensee's management measures program effectiveness. If applicable, this task will be accomplished as part of management measures inspections described in IP 88201. However, inspectors should familiarize themselves with the licensee's management measures program requirements that apply to the work activity they are inspecting and evaluate the implementation of management measures directly applicable to the work activity being inspected.

#### 88200-04      RESOURCE ESTIMATE

The resource estimate for conducting inspections of significant safety items and services during construction is approximately 650 to 1500 hours (50 to 115 hours per inspection procedure appendix) of direct inspection effort over the duration of the project. The scope of the inspections and use of the inspection procedure appendices will vary based on the specific technical areas that are available for inspection; therefore, these hours may be distributed over multiple inspections by technical area as necessary. These hours are an estimate; staff will continually assess the hours spent on a particular construction project and adjust the estimate based on operating experience and complexity of the project.

## 88200-05      PROCEDURE COMPLETION

This IP is complete when the applicable appendices or applicable appendix sections are completed for the facility. Inspectors are not expected to complete every activity in the appendices of this IP. Instead, inspectors should prioritize inspection activities during their visit to the site based on 1) importance of the activity to safety, 2) availability of the activity at the time of the inspection, and 3) available inspection resources. Inspectors may consult with their supervisor and/or NRC headquarters technical staff, if necessary, to prioritize inspection activities. Depending on the characteristics of a specific facility and the corresponding safety significance of the activities addressed by a specific appendix to this IP, a single visit or multiple site visits may be necessary to complete an appendix to this IP. An appendix to this IP need not be completed if there are no SSIS covered by that appendix at an FCF. The appendices, or sections of the appendices, and inspection samples and hours, applicable to a specific facility, will be determined and documented in the PIP for that facility.

## 88200-06      REFERENCES

NOTE: Additional references specific to Appendix A through Appendix M are included in the reference section of that appendix.

10 CFR 70 Subpart H, "Additional Requirements for Certain Licensees Authorized to Possess a Critical Mass of Special Nuclear Material."

NUREG-1520, "Standard Review Plan for Fuel Cycle Facilities License Applications."

END

### List of Appendices:

- Appendix A: Foundations and Buildings
- Appendix B: Structural Concrete
- Appendix C: Structural Steel and Supports
- Appendix D: Piping Systems
- Appendix E: Pipe Support and Restraints
- Appendix F: Mechanical Components
- Appendix G: Electrical Cable
- Appendix H: Electrical Components and Systems
- Appendix I: Ventilation and Confinement Systems
- Appendix J: Instrumentation and Control Systems
- Appendix K: Welding
- Appendix L: Fire Protection Systems
- Appendix M: Inspection of Digital Instrumentation and Control System/Software Design

### List of Attachments:

- Attachment 1: Revision History for IP 88200

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Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment Resolution and Closed Feedback Form Accession Number (Pre-Decisional Non-Public Information)
	ML24200A232 05/28/25 CN 25-014	New inspection procedure, with multiple discipline-specific appendices, developed to provide technical inspection guidance for new construction and major modifications activities for fuel facilities with varying technologies, size, licensing requirements, etc.	N/A	N/A